# 4½ DIGIT DC-POWERED STRAIN/MICROVOLTMETER

# DP3520-PA





- ✓ ±19,999 Count Display Span
- True-Differential Input
- 3-Wire Ratio Measurement
- Serial BCD Output
- ✓ Bright, 14 mm (0.56") LED Display
- Automatic Zero and Polarity
- Display Hold and Test
- ✓ 5 Vdc Power
- ✓ Low-Profile <sup>1</sup>⁄<sub>16</sub> DIN Case
- RoHS 2 Compliant

The DP3520-PA is an economical 5-volt powered, high-resolution, high-accuracy  $4\frac{1}{2}$  digit dc microvoltmeter in a compact  $\frac{1}{16}$  DIN case. The height of the panel cutout is 22 mm (0.88"), and the depth required behind the panel is only 72 mm (2.83").

Low cost, small size, low power consumption at 5 Vdc and exceptional power-supply noise rejection make the DP3520-PA ideal for demanding OEM and portable-instrument applications.

## MICROVOLT PREAMPLIFIER

The DP3520-PA incorporates a preamplifier, which can be programmed for resolution from 1 to 25  $\mu$ V/ count and for a zero offset up to ±0.6 mV (RTI) ±21% of full-scale readout (RTO).

The DP3520-PA can be configured for use with load cells and pressure gauges, which require zero and span adjustment for readout in engineering units. Bridge excitation may be provided by the same 5 Vdc supply that powers the meter, or by an external, isolated 10 or 15 Vdc power supply.

The DP3520-PA can also be configured as a microvoltmeter using an internal reference, or in a ratiometric mode using an external reference.

## SERIAL BCD

Non-isolated, character-serial BCD output is standard to allow the DP3520-PA to be interfaced to other instrumentation.

DP3520-PA shown actual size.

**OF OMEGA** 

Model DP3520-PA provides a differential programmable preamplifier for use with low-level bridge circuits. Bridge excitation can be provided by the same 5 Vdc power supply that powers the meter.

# SPECIFICATIONS

## **Noise Rejection**

NMR, SIG HI to SIG LO: 60 dB, 50/60 Hz CMR, SIG GND to SIG LO: 86 dB, DC to 60 Hz CMV, SIG GND to SIG LO: -1 to 2.5 Vdc Power Supply Rejection: 86 dB at 50/60 Hz

#### Conversion

Technique: Dual-slope, average-value Signal Integration Period: 100 msec Read Rate: 2.5/sec

# Analog Input

Input Configuration: Differential, ratiometric Coarse-Span Adjustment: Jumper-selectable gain ranges Fine-Span Adjustment: Front-panel accessible precision potentiometer

Zero Adjustment (RTI or Deadload): ±0.6 mV

Zero Adjustment (RTO or Tare): ±20.9% of full-scale display Bias Current: 10 nA typ, 20 nA max

## Accuracy At 25°C Error

Max: ±0.01% of reading ±2 counts

Span Tempco, Typ: ±0.003% of reading/°C

Zero Tempco, Typ:  $\pm 0.3 \; \mu V/^{\circ}C$ 

Step Response: 2 sec to 99.9% of span

Warmup to Rated Accuracy: 30 min

## **Digital Signals**

Output Signals: TTL-compatible HOLD Input: TTL or 5V CMOS compatible

BLANKING Input: Open-collector compatible

Power Voltage: 5 to 5.25 Vdc

Current: 170 to 230 mA Power Consumption: 1 W (nominal)

#### Environmental

Operating Temperature: 0 to 55°C (32 to 122°F) Storage Temperature: -40 to 85°C (-40 to 184°F) Relative Humidity: 95% at 40°C (104°F) (non-condensing)

#### Mechanical

Dimensions: 24 H x 96 W x 72 mm D (0.94 x 3.77 x 2.82") Panel Cutout: 22.2 x 92 mm (0.874 x 3.622") Weight: 145 g (5 oz) Case Material: 94 V-0 UL-rated polycarbonate



#### **Analog Input**

	SIGNAL RANGE	DISPLAY RANGE	RESOLUTION	PREAMPLIFIER GAIN
Most Sensitive Scaling	±20 mV	±19,999	1 μV/count	100
Least Sensitive Scaling	±500 mV	±19,999	25 μV/count	4

To Order							
MODEL NO.				DESCRIPTION			
DP3520-PA				41/2 digit DC powered strain/microvoltmeter			
	*			(Nothing, leave field blank) spring clamp case mounting			
	-UC			U-shaped mounting clamp			
		*		(Nothing, leave field blank) standard (±0.005% of reading/°C) span tempco			
		-LT		High-stability (±0.001% of reading/°C) span tempco			
			*	(Nothing, leave field blank) red LED display			
			-G	Green LED display			

NOTE: All combinations may not be valid, check online for valid part numbers.

Ordering Examples: DP3520-PA, for 41/2 digit dc strain/micro voltmeter, 5 vdc powered.